APPENDIX - IV

MAHARSHI DAYANAND SARASWATI UNIVERSITY,
AJMER

Format for Outline of Proposed Research work
(to be supplied in Six copies)

1. Nameof Scholar (In English) MOHAMMED IRFAN KHAN
   (In Hindi) मोहम्मद इरफान खान
2. Title of the Research Work :
   (In English) "A study of Adoption of Information Technology and its Impact on Micro and Small Enterprises in Rajasthan."
   (In Hindi) "राजस्थान में सूक्ष्म और लघु उद्यमों में सूचना प्रौद्योगिकी के अंगीकरण एवं उसके प्रभाव का अध्ययन"
3. Location
   a. Institution/Department where the work is to be done
   b. Geographical area of Investigation, if any.
4. Introduction Importance of Proposed Investigation, Objectives.
5. Review (Work already done on the subject of proposed Research Study.)
6. Research Gaps identified in the proposed field of investigation. (Based on the review)
7. Major Hypothesis, if any.
8. Research Methodology.
9. List of References cited.

15/sept./2016
Signature of the Candidate with date

Outline Approved.

14/9/16
Name and Signature of supervisor with date & seal.

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MAHARSHI DAYANAND SARASWATI UNIVERSITY, AJMER

Format for Outline of Proposed Research Work

1. Name of scholar *(In English)* MOHAMMED IRFAN KHAN

(In Hindi) मोहम्मद इरफान खान

2 Title of Research work *(In English)* **A Study of Adoption of Information Technology and its Impact on Micro and Small Enterprises in Rajasthan**

(In Hindi) राजस्थान में सूक्ष्म और लघु उद्यमों में सूचना प्रौद्योगिकी के अंगीकरण एवं उसके प्रभाव का अध्ययन

3. Location:-

(A) Institution / Department where the work has be done Department of Management Studies, Maharshi Dayanand Saraswati University, Ajmer.

(B) Geographical area of Investigation Ajmer and Jaipur Division

4. Introduction, Importance of proposed Investigation.

5. Review of Literature

6. Research Gap

7. Research objectives

8. Major Hypotheses

9. Research methodology

10. Chapter plan

11. Expected duration for the work

12. Facilities Available for the work

13. List of references cited

Signature of Candidate with date

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Outline Approved

Name and Signature of Supervisor with date & Seal

……..

4. Introduction

There are about 13 million SMEs in the country manufacturing about 8000 products and accounting for 60 percent of India's exports. Some of them are so big that they produce up to 80 percent of the total volume of that particular product produced in India. Information and communication technology (ICT) is perceived to play a crucial role in transforming not only big but also small-and-medium enterprises (SMEs).

SMEs have gradually recognized the positive impact ICTs, such as computer terminals, e-mail and the Internet and their applications can have on their business. In advanced OECD (Organization for Economic Cooperation and Development) countries, most small firms, including micro-enterprises with fewer than ten employees, now have at least the computer terminal, usually with Internet access. Many types of business software can improve information and knowledge management within the firm, leading to more efficient business processes and better firm performance. Communication via e-mail and the Internet can help to improve external communication, in either Business-to-Commerce (B2C) or Business-to-Business (B2B) context, and may reduce transaction costs, increase transaction speed and reliability, and extract maximum value from each transaction in the value chain.

Especially in competitive business environment and managers utilize information as a resource to plan, organize, and staff administers and control activities in ways that achieve the enterprises objectives. The ability of SME's to realize their goals depends on how well the organization acquires, interprets, synthesizes, evaluate and understands information and how well its information channels supports organizational processes.

This technology will continue to enable the growth of global work, where SMEs operate across national boundaries. Now a days, new technologies, especially Internet technology are changing the global flows of information, trade and investment and the competitive advantage of industries, services and regions. These changes are requiring from all enterprises, no matter of their size to invest in the adoption of new technology. The ability of SMEs to survive in an increasingly competitive and global environment is largely influenced upon their capacity to access information as a resource and usage of new technologies. Greater use of these

technologies is often associated with improved availability of information, quality of work, effectiveness and efficiency in accomplishing tasks.

Along with this, ICT and its impact in the economic, social and personal development had become an important object of scientific researches during recent decades. According to Ollo-Lopez and Aramendia-Muneta (2012), numerous studies have focused on analyzing how adoption of ICT alter companies and therefore differentiated two types of studies:

• the ones pertinent to productivity
• second related to the environment

findings of recent research confirmed that ICT has impact on the reduction of greenhouse and others increase the efficiency of energy (Hall, Lotti & Mairesse, 2013) In the industrialized countries almost 30 per cent of all budgets of research and development (in both, private and public sectors) are allocated to research and development of ICT. Existing research suggests that small and medium sized enterprises form a dynamic and important part of the economy in most countries (Wolf, 2001; Matthews, 2007). Moreover, according to Alam and Noor (2009) SMEs account for more than half of all business and over half of all employment in the developed countries (including Australia and United Kingdom); in Europe SMEs represent around 99 per cent of the total number of companies (Lopez-Nicolas & Soto-Acosta, 2010). Therefore, the limited amount of research concerning ICT adoption and effects on SMEs has been indication of the fact that SMEs started to use ICTs relatively recently.

Alam and Noor (2009) also notes that the majority of the empirical research is based on large companies and usually SMEs are portray as lacking of knowledge about the possible actual advantages of ICT. Authors also agree on some researches opinions that the use of ICT can improve business competitiveness with internet providing opportunities for SMEs to compete equally with large enterprises. As there is growing number of research in ICT area the aim of this paper is to analyze the literature on potential direct and indirect effects of ICT on SMEs performance and to identify those that could determine a business success. The methods of research are systematic, logic and comparative analysis.

ICT impact on organizations:

In the companies and countries that assimilate new technologies and innovations rapid changes are expected. There are different studies analyzing ICT, especially factors that impact ICT adoption. Analysis of ICT effects in private sector is significant only after thorough analysis of conditions that should be satisfied in order to successfully adopt ICT – expectations towards positive impacts of ICT and characteristics of individual company (financial, technological, personnel resources, flexibility of structures etc.) are closely linked. According to Alam and Noor (2009) the adoption of the ICT is treated to be a means to enable businesses to compete on a global scale, with improved efficiency, and closer customer and supplier relationships. Therefore the adoption of ICT is recognized as crucial condition enabling SMEs to consider information and communication technology as an important implement in their business to take competitive advantage from the global markets. Also some researchers attempted to identify impact of ICT adoption in private sector and understand crucial environmental elements and factors for successful development of company. Therefore Manochehri, Al-Esmail and Ashrafi (2012) states that in order to benefit from ICT adoption, to deliver better services and explore new business opportunities, there should be satisfied at least three conditions and there should be:

- Certain infrastructure
- Skilled ICT personnel
- Budget to invest in ICT

All three conditions should be satisfied to achieve the best results. Similar groups of necessary conditions of ICT adoption were highlighted in Ollo-Lopez and Aramendia-Muneta (2012) work. Authors claimed that all determinants and factors of ICT adoption analyzed in previous scientific literature can be classified into three groups: factors related to the company staff that is going to use ICT, factors related to the characteristics of the company and factors related to the environment in which the company operates. After the thorough multiple regression analysis of the study which examined the relationship between ICT adoption and its factors Alam and Noor (2009) and Lopez-Nicolas and Soto-Acosta (2010) found out that perceived benefits, ICT knowledge and skill, government support are also significant elements of ICT adoption. This may suggest that the productive use of ICT is closely linked to use of organization resources in

general. Moreover, the microclimate of organization and organization's preparedness to adopt ICT are related to factors of macro environment and expected benefits. Basing on logic observations of scientific literature Consoli (2012) states that the benefits/advantages of ICT depend on several variables:

- The type of business,
- Internal changes (e.g. re-engineering process, personnel retraining),
- Suppliers-customers interaction

Impact of ICT in SME sector:

The SME sector has an important role to play in economic development, poverty reduction and employment creation in developing economies. The SME sector largely exceeds the average economic growth of national economies in many countries and contributes significantly to employment creation. (Esselaar, et al., 2006; Higon, 2011).
A study in the UK identified three distinct stages in IT use in small businesses (Matthews, 2007):

- Basic – minimal usage of IT,
- Substantial – several applications and machines in use,
- Sophisticated – integrated various systems and constantly developed use of technology.

Matthews (2007) argues that in terms of harnessing technologies (including ICT) a similar staged progression can be observed, with companies progressing from simple to enabling technologies. As organization/company grows/expands a specific function or department is more likely to be required. Moreover, the stage of harnessing technologies and certain infrastructure, skilled ICT personnel etc. are closely linked and could determine the extent of potential positive impact of ICT. If there are certain infrastructure, skilled ICT personnel and sufficient budget to invest in ICT, positive impact could be expected in the private sector – according to Manochehri, Al

Esmail and Ashrafi (2012) ICT platforms (for example.: PCs, mobiles, internet, etc.) have four main contributions to organizations:

- More visibility to business enterprises;
- Provide more information to small firms;
- Allow enterprises to overcome traditional trade barriers;
- Facilitate financial transactions**.**

ICT also influences flexibility of the organizations and companies – companies that adopt ICT tend to perform better in market and easier differentiate products, services etc. Ollo-Lopez and Aramendia-Muneta (2012) state that ICT adoption seems to have a positive effect on productivity, directly as well as indirectly, depending on the sectors and to have great potential to support a sustainable development. Furthermore, the use of e-mail, e-commerce, and social media network have significantly cut down on the physical transportation involved in sending mail, banking, advertising and buying goods (Manochehri, Al-Esmail & Ashrafi, 2012). However, it is important to emphasize importance of long term investments in ICT because the positive impact of ICT occurs only after a period of adoption. (Consoli, 2012; Bayo-Moriones, Billon & Lera-Lopez, 2013) Also it is important to take in mind that organizations adopting ICT have to adjust their structure, make internal changes such as personnel training, and reorganize them.

There are lots of SMEs in Ajmer and jaipur Division. This study is used to examine the effects of Information and communication technology on the performance of SMEs of Ajmer and jaipur Division.

Significance of the Study

The objectives of this research is to investigate the impact of ICT on growing SMEs in Rajasthan with particular attention on how ICT improves their competitiveness and business performance in the face of this rapidly changing and globalised world.

This study is sought out to find the impact of Information and communication technology (ICT) on Small and Medium enterprises (SMEs).

This study also describes the contribution made by the Information and communication technology in the growth of Small and Medium enterprises.

It also helps in understanding the challenges which ICT implementation face in developing countries. It is also plays a vital role in understanding the barriers which SMEs have to face while adoption of ICT.

5. Review of Literature

5.1 ICT AND GROWTH IN SMES:

According to world development report (1999), for leading countries in the world economy, the equity between knowledge and resources has shifted so far towards the former that knowledge has become perhaps the most important factor determining the standard of living more than land, tools, and labor. Today's most technologically advanced economies are absolutely knowledge based. Countries in the world are moving from an industrial economy to a knowledge economy in which economic growth is dependent on a country's ability to create, accumulate and disseminate knowledge. Computers and the internet organize the growth of the knowledge economy by enabling people to put knowledge into a digital form easily transmitted to anywhere around the world. ICT has speed up the pace of globalization and increase the complexity of business practices because firms not only need to be familiar with their local context but also with global developments. Thus, to compete in the knowledge economy, countries need a strong ICT literate skills base that can innovate and modify quickly to change. More value is placed on the knowledge worker than ever before, knowledge economy relies heavily on ICT; it has led to the rapid growth of ICT sectors. Many countries such as India, the Republic of Korea, Taiwan and China have created enabling environments to ensure that SMEs are well positioned to capture these emerging business opportunities. India, for example offered relief from import duties for IT hardware, tax deductions for income earned from software exports, and tax holidays, and developed infrastructure in software technology parks. India's thriving ICT sector has in turn propelled the country's economic growth. SMEs outside the ICT sector have also benefited by adopting ICT in their own operations, enabling them to communicate quickly, increase productivity, develop new business opportunities, and connect to global networks.

Melville et al. (2004), highlight that the use of ICT brings about customer satisfaction by improving service quality thereby offering new opportunities for companies.

5.2 ICT CHALLENGES IN DEVELOPING COUNTRIES:

Wolf, S. (2001) initiate that in most African countries, small and medium enterprise (SME) account for a important share of production and employment and is therefore precisely connected to poverty alleviation. Especially in developing countries SMEs are challenged by the globalization of production and the shift in the importance of various elements of competiveness. ICTs can improve ability and increase productivity by different actions including, improving efficiency in resource allocation, reducing transaction costs, and technical improvement, leading to the outward shifting of the production function. Although South Africa is much more developed and its ICT infrastructure is far more advanced, Wolf in his study found that SMEs in South Africa faces similar problems as in other African countries with respect to poor management practices, limited access to technology, and limited access to credit facilities education, unemployment, ICT infrastructure and role of the SME sector leading to slow pace of internet services. The challenges is to move SMEs to go beyond these first few basic steps, and to eventually move towards integrating ICTs in more sophisticated business applications. This is a major step for SMEs, especially in developing countries, because these would require management and technical skills and investments (as well as organizational changes) that they may not be able to afford or for which they may not have ready access.

Ciemleja and Lace (2008) found that innovative activity of the enterprise is directly connected with the educational level of managers. Technical education background and work experience of entrepreneurs in the same industry generate necessary technological capability and thereby facilitate the technological innovations of small firms.

5.3 BARRIERS TO ICT ADOPTION:

Large organizations have ample resources to adopt ICT while on the other hand SMEs have finite financial and human resources to adopt ICT. (Duan et al 2002) identified lack of ICT skills and knowledge in SMEs as one of the primary challenges faced by all European countries,

particularly in the UK, Poland and Portugal, in their study. (Houghton and Winklhofer 2004) have reported a slow response of SMEs relating to adoption of ICT. (Shiels et al 2003) found that characteristics of the firm and industry sector are contributory factors to the adoption and exploitation of ICTs by SMEs. (Kapurubandara et al 2006) have classified internal and external barriers that retard adoption of ICT by SMEs in a developing country. The internal barriers include owner manager characteristics, firm characteristics, cost and return on investment, and external barriers include: infrastructure, social, cultural, political, legal and regulatory. (Costello and Sloane,2003) state that SMEs are hindered in adopting technologies as a result of the barriers that arise in the organization. According to Rodgers et al. (2002), a small and medium-sized enterprise needs to entirely reshape its current systems because ICT adoption projects are complex in nature.

Ngwenyama and Morawczynski (2007) argue that everyone assumes that ICT will successfully bring about benefits, but not all environments are the same. The issues affecting successful implementation or adoption of ICT are both socio-economic and technological. MacGregor and Vrazalic (2006) agree that the barriers to adopting ICT by SMEs are both socio-economic and technological, by pointing out that the barriers can be caused by factors external and/or internal to the organisation, which in this case is the SME.

5.4 THE IMPACT OF ICT ON SMEs:

It is only in the 1990s that empirical evidence was found that computers had a generous effect on firms' productivity levels. In their studies of the effect of information technology on productivity, Brynjolfsson and Hitt (1995) observed that beside firm effects, ICT capital contributes positively and significantly to output and productivity for large US firms. Similar results are also found when examining the effects the use of various ICTs has on productivity. These results were consolidated even further in a more recent study (Brynjolfsson and Hitt 2000), which underscores the importance of integral factors such as restructuring the enterprise and improving the skills level of the personnel to get productivity growth as a result of investment in ICT. There are hardly any studies that analyze the effect of ICTs on small enterprises in developing countries, partly due to data problems. Müller-Falke (2001) found out for Indian manufacturing SMEs that enterprises that use more progressive forms of ICT have on

average higher labor productivity and a higher growth rate. In a survey of 59 electric and electronic manufacturing Indian SMEs mainly employing less than 50 people, Lal (1996) observed higher profit margins, skill intensity and export and import intensities for firms using IT.

There is also some evidence that export performance of SMEs is related to ICT adoption (Lal 1999, Nassimbeni 2001). However it is not the investment in the technology alone but the combination with other technologies and especially relevant skills that make ICT work. Flexibility is considered to be a major source of competitiveness for SMEs compared to larger enterprises. The use of ICT could now on the one hand increase the competitiveness of SMEs as they enable the creation of more flexible links with trading partners because of faster and more reliable communication channels. On the other hand ICTs could help bigger enterprises to increase their flexibility through a restructuring of the organization which will enable them to adapt quicker to changing conditions. Therefore the competitive advantage of SMEs could also decline. (Susanna Wolf, 2001).

(Osterwalder, 2007) have described that idealists believe that "ICT haves" generate more opportunity than "ICT have-nots" in ICT enhanced education, business, or even healthcare. (Ongori, 2010) stated that the adoption of ICT by SMEs provides the strength of brisk access to data, assessment, processing and diffusion of large data volumes. Consequently, only those SMEs which use the state-of-the-art technologies have the opportunity to enter the international market and remain competitive despite the challenges of globalization, liberalization and scientific and technical progress. According to (Becheikh, N., R. Landry, and N. Amara 2006) Technological innovation is inevitable for firms which want to develop and retain a competitive advantage and/or gain entry in to new markets. (Pokharel, 2005; Taylor and Murphy, 2004) postulates that ICTs adoption by SMEs raise productivity in the production process strengthen and increases efficiency of internal business operations, and connecting SMEs more freely and reasonably to external contacts. (Dangayach and Deshmukh, 2003; Sheils et al., 2003) noted that reliable productivity gains have been obtained in enterprises which have adopted information and communication technology.

(Andries,2006) stated that there are diverse exogenous characteristics in the business environment and endogenous organizational factors triggering SMEs to adopt ICT. (James Manyinka et al, 2011) found that the recent increase in technological growth has strong impact on SMEs in other parts of the world including China and Brazil. (Chaminade, C., and J. Vang, 2006) have described that the flexibility of SMEs, their simple organizational structure, their low risk and receptivity are the essential features facilitating them to be innovative Therefore, SMEs across industries have the unrealized innovation potential. (Akanji, 2006; Akintoye and Oladejo, 2008; Akande, 2013) argued that SMEs have played a key role in the economies of both developed and developing countries in terms of turnover, level of employment and serve as a mechanism to fight against poverty as evidenced in the literature. (Hazbo et al, 2008) have said that the adoption of ICT is crucial to SMEs as ICT has become a major catalyst and enabler of organizational change. (Minton, 2003) argued that through the use of information technology, SMEs can gain from developing capabilities for managing information, intensive resources, enjoy reduced transaction costs, develop capacity for information gathering and dissemination of international scale and gain access to rapid flow of information.
According to Hitt et al. (2001) firms need to actively participate in the global market, use the latest technology, continue to develop new technology, and structure themselves to be ahead in these markets.

Apulu and Latham (2009) noted that there is a variation in the adoption of ICT solutions between the developed nations and the developing nations. The developing nations are adopting such solutions at a slower rate. The authors pointed out that this might be because such technologies are produced in the developed countries to meet their needs while they are imported into the developing nations, though to meet similar need but at a slower rate because the technology is not developed to directly meet the need of developing countries.

According to Hitt et al. (2001) firms need to actively participate in the global market, use the latest technology, continue to develop new technology, and structure themselves to be ahead in these markets. So, information technology has the potential to enhance operational efficiency and effectiveness, change the way businesses compete to create strategic opportunity and redraw competitive boundaries.

(Manmood and Man, 2008;Oladejo and Yinus,2013), propose that taking advantage of Information Technology dissemination is possible for business organization and adoption of IT can provide organization with valuable information, improved performance, improve relationships with customers and suppliers, increase efficiency and reduce cost of production among others. According to (Mobaraki, 2010) As the world today cannot consider without electricity industry in the world today cannot imagined without information and communication technology. According to Laudon and Laudon (2010), information technology is one of the important tools that managers (businesses) use to cope with change.

(Okwuonu, 2013). Stated that ICT can be used to find, develop, analyze and present information, as well as to model situations and solve problems. It enables rapid access to ideas and experiences from a wide range of people, communities and cultures, and it is a powerful force for change in any society. (Hyvönen *et al*. (2003) advocate that the utilization of ICT is one of the key areas that modern companies develop in order to achieve strategic gains.
Ashrafi and Murtaza (2008) state that organizations around the globe are now utilizing ICT not just for cutting costs and improving efficiency, but also for providing better customer service. According to Spanos *et al*. (2002), buyers and sellers are able to share information and transfer goods across national borders with the use of ICT, which helps to increase access to global supply chains. According to a study by Lymer (1997) it stresses that ICT implementation in the organization which includes SMEs has the potential to reduce costs and increase productivity level. According to them small firms might find cost-effectiveness as a motivating factor to use Internet-commerce for improving communication with trading partners and consumers.

Sakai (2002) study also stresses that the extensive use of ICT can allow micro-enterprises with ideas and technologies to remain small and profitable or generate substantial global sales by exploiting their intellectual property over the Internet.

According to Schubert and Leimstoll (2007), there are two schools of thought with regard to the issue of ICT value. The one, known as Porter's theories, says that ICT adds value to SMEs and the other, known as Millar's theories, believes that ICT does not really add any value since it is a commodity, just like electricity, available to everyone.

According to Kalakota, R. and Marcia (2001), technology is no longer an afterthought in forming business strategy, but the actual cause and driver. Hence, currently, the use of information system resources such as computers, internet, e-business, point of sales (POS) and other ground-breaking business practices is a common feature of SMEs in the advanced world.

6. Research Gap

Technological innovation is a key factor in a firm's competitiveness. Technological Innovation is unavoidable for firms which want to develop and maintain a competitive advantage and/or gain entry in to new markets.

Researchers in the past decade have shown immense deviation towards the ICT adoption and its usefulness for the SMEs as it is the basic need for the organization to remain in the cut throat competition of this era of globalization, communication media is the only way to remain in touch with the business partners and with the others, In addition ICTs are mediums that utilize both telecommunications and computer technologies to transmit information. ICT environment helps in fast and accurate decision-making by the SMEs due to increased mobility. The critical components before SMEs are speed of services, access to information, empowering employees in terms of skill and delivering highest valued services at competitive cost.

1. In this area of research most of the studies has been done in foreign countries.

2. There is no substantial research regarding identifying the impact of IT on Small Business in Ajmer division.

3. Government is emphasizing on going digital. Central government has initiated digital India project which cannot be fulfilled if the Small Business which are the major contributors of economy do not adopt IT. So this study tries to gather information about the current status of IT adoption in Small businesses.

7. Objectives of The study

The overall purpose of this study is to investigate the impact of ICT on SMEs' performance.
To arrive at the above purpose the following research objectives are developed:

- To study the pattern of adoption of IT in Small Business.
- To assess the determinants of IT adoption in Small Business with respect to technological, environmental, organizational and individual aspects.
- To determine the role of top manager and their innovation orientation on adoption of IT.
- To investigate how the Small Business use IT as part of their business strategy to gain a competitive business advantage.

- To examine the challenges and opportunities faced by Small Business in their adoption of IT to create value of their business.

8. Hypothesis

- Following null hypothesis will be tested for proposed research work-:

- H01: There is no significant relationship between ICT adoption and Small Business performance.

- H02: There is no positive relationship between ICT adoption and competitive advantage of Small Business.

- H03: There is no positive relationship between ICT adoption and profitability of Small Business.

9. Research Methodology

The objective of this chapter is to provide a description of the procedure which will be used to measure the constructs and collect data .following are the steps which will be used to carrying out the report is as follows.

Research Design

This study will be descriptive in nature.

Sector

Different SMEs of Rajasthan

Sources of Information

Primary as well as secondary data sources will be used to generate evidence to supplement the research design. The primary source of data will be collected from Founder, general manager or accounts manager.

Secondary sources of data will be collected through websites. Some articles on the research topic will also be taken in consideration and data will also be gathered from different books on small business management.

Data collection and sampling

Data will be collected from Micro and Small enterprises from Rajasthan.

A survey instrument was formulated to obtain feedback from Micro and Small enterprises in Rajasthan, assessing their impact, level of adoption and barriers in adoption of ICT in their business.

As such the surveys sent out were personally addressed to the owner/manager of each of Micro and Small enterprises.

The population of this study comprises of all micro and small enterprises from service sector and manufacturing sector which are registered under MSMED ACT,2006. The MSMEd Act , 2006 defines the Micro, Small and Medium Enterprises based (i) on the investment in plant and machinery for those engaged in manufacturing or production, processing or preservation of

goods and (ii) on the investment in equipment for enterprises engaged in providing or rendering of Services.

Tools for data analysis

The data will be subjected to statistical analysis after being collected from the field .It will be coded, cross tabulated, and presented in tables and van diagrams. The reliability of the scale will be tested using Cronbach's alpha, simple and multiple regression analysis and correlation analysis which will lead casual results. ANOVA and Chi square will be used for testing the hypothetical relationship of the variables for proposed research work.

10.Chapter wise details of proposed research work are as follows

1. **Introduction**

   This introductory chapter will provide the detail of research background, problem statement, research question, and significance of the study, scope of research, chapter layout and conclusion.

2. **Review of Literature**

   This chapter will throw light on the work that has already been done in this field.

3. **Research Methodology**

   This chapter would lay out the objectives for this research study. The chapter shall also discuss the Hypothesis to be tested and the research design, sample design and the method of data collection which will be used.

4. **Findings & Analysis**

   This chapter will present the result of the study analyzed using the appropriate tools and techniques. The findings of the research will be presented in detail.

5. **Conclusion, Recommendations and Direction for Future Research**

   This chapter will summarize the conclusions, interpreted from the analysis of data and make the necessary recommendations.

6. **References**
7. **Annexure**

11. Expected duration of the work

Expected duration of the proposed research is as follows:

Coursework	6 Months
Review of literature	3 Months
Testing and development of questionnaire	3 Months
Collection of data	5 Months
Analysis of data	3 Months
Compilation and report writing	3 Months
Binding and submission	1 Month

12. Facilities available for the work

1. All the books and Literature related to the research work of researcher are available in the Department.

2. All reference books related to research work are available in Department.

3. Maximum reference literature are available whom researcher refers in his application unavailable books will be provided by library.

4. Magazine department of Central library will provide those magazines, which are related to research work of researcher.

5. Researcher will be allowed to read and write work in the library.

6. All other facilities related to the research work will be provided to the researcher from the Department.

Signature of Head of Department

13. REFERENCES

- Alam, S. S., & Noor, M. K. M. (2009). ICT adoption in small and medium enterprises: an empirical evidence of service sectors in Malaysia. International Journal of Business and Management, 4(2), 112–125.

- Andries, P., & Debackere, K. "Adaptation in new technology-based ventures: Insights at the company level", International Journal of Management Reviews (8:2), 2006, 91 112.

- Apulu I. and Latham A. (2009) ICT Adoption: Challenges for Nigerian SMEs, TMC Academic Journal, 2009, 4(2):64-80

- Ashrafi, R., & Murtaza, M. (2008). Use and impact of ICT on SMEs in Oman. The Electronic Journal Information Systems Evaluation, 11(3), 125–138

- Bayo-Moriones, A., Billon, M., & Lera-Lopez, F. (2013). Perceived performance effects of ICT in manufacturing SMEs. Industrial Management & Data Systems, 113(1), 117–135. http://dx.doi.org/10.1108/02635571311289700

- Becheikh, N., R. Landry, and N. Amara (2006). 'Lessons from Innovation Empirical Studies in the Manufacturing Sector: A Systematic Review of the Literature from 1993–2003'.

- Brynjolfsson, E & Hitt, L.M. (2000) Beyond computation: information technology, organizational transformation and business performance. Journal of Economic Perspectives, 14(4): 24-48.

- Biggs, Grindle & Snograss (1988), The Informal Sector, Policy Reform, and Structural Transformation, in Beyond the Informal: Included the Excluded in Developing Countries, ed. J Jenkins, Institute for Contemporary Studies Press, San Francisco.

- Brynjolfsson, E & Hitt, L.M. (1996) Paradox Lost? Firm-level evidence on the returns to information systems spending. Management Science, 42(4) 541-558.

- Calderia, M.M. & Ward, J.M. (2002) Understanding the successful adoption and use of IS/IT in SMEs: an explanztion from Portuguese manufacturing industries. Information systems journal, 12: 121-152.

- Carr, N. G. (2003, May). IT doesn't matter. Harvard Business Review, May 2003., pp. 41-49.

- Chaminade, C., and J. Vang (2006). 'Innovation Policies for Asian SMEs: An Innovation System Perspective'. In H. Yeung (ed.), Handbook of Research on Asian Studies. Cheltenham: Edward Elgar.

- Ciemleja, G.& Lace, N. (2008). The factors determining innovation-based attitude of Latvian SMEs towards sustainability, paper presented at 5th International Conference on Business and Management.

- Consoli, D. (2012). Literature analysis on determinant factors and the impact of ICT in SMEs. Procedia – Social and Behavioral Sciences, 62,93–97.

- Costello, P. & Sloane, A. (2003) Friendly Advice? – How SMEs gain knowledge of ICT. Proceedings: Eighth UKAIS Annual Conference, Warwick University, 9-11 April 2003.

- Curran, J. & Blackburn, R. (1994) Small Firms and Local Economics Networks. Paul Chapman.

- Dangayach, G.S. and Deshmukh, S.G., (2003). Evidence of manufacturing strategies in Indian industry. International Journal of Production Economics, 83: 279-298.

- Daun, Y., R. Mullins, D. Hamblin, S. Stanek and H. Sroka *et al*., 2002. Addressing ICTs skill challenges in SMEs: Insights from three country investigations. J. Eur. Ind. Traizning, 26: 430-441.

- Debbie Ariyo, 2005. SMALL FIRMS ARE THE BACKBONE OF THE NIGERIAN ECONOMY.

- Esselaar, S., Stork, C., Ndiwalana, A., & Deen-Swarray, M. (2007). ICT usage and its impact on profitability of SMEs in 13 African Countries. Information Technologies and International Development, 4(1), 87–100.

- Fundación CAATEC, (2009). Information and Communication Technologies and Small and Medium Enterprises (SMEs) Performance in Costa Rica: A Randomized Controlled Experiment.

- Ghana: Financial System Stability Assessment Update, December 2003, IMF Country Report no. 03/396 10 James Manyika and Charles Roxburg, (2011). The great transformer: the impact of internet on economic growth and prosperity.

- Hall, B. H., Lotti, F., & Mairesse, J. (2013). Evidence on the impact of R&D and ICT investments on innovation and productivity in Italian firms. Economics of Innovation and New Technology, 22(3), 300–328.

- Harker, D. and Akkeren, J.V., (2002). Exploring the needs of SMEs for mobile data technologies: The role of qualitative research. Journal of Research Practice Inform. Tech., 5: 199-209.

- Hazbo, S., Arnela, C., and Chun-yan, H. (2008). ICT adoption model of Chinese SMEs. International Journal of.

- Higon, D. A. (2011). The impact of ICT on innovation activities: evidence for UK SMEs. International Small Business Journal, 30(6), 684–699.

- Hitt, M.A.; Ireland, R.D; Camp, S.M.; and Sexton. D.L. 2001. Introduction to the Special Issue Strategic Entrepreneurship: Entrepreneurial Strategies for Wealth Creation. Strategic Management Journal, 22(6:7) 479-491.

- Hyvönen, T., Järvinen, J. and Pellinen, J. (2003) ICT and Accounting in the strategy process. Frontiers of E-Business Research, 2003, pp. 230-249.

- James Manyika and Charles Roxburg, (2011). The great transformer: the impact of internet on economic growth and prosperity.

- John Seely Brown and John Hagel, (2003). Does IT Matter?

- Kalakota, R. & Marcia, R. (2001). E-Business 2.0 Roadmap for Success.

- Kalanje, C (2002) Enhancing the Competiveness and Growth of SMEs

- Knoll, W.H.C & Stroeken, J.H.M. 2001. The diffusion and adoption of information technology in small and medium sized enterprises through IT scenarios. Technology Analysis & Strategic Management, 13(2): 227-246

- La Rovere, R.L. 1996. IT diffusion in small and medium-sized enterprises: elements for policy definition. Information Technology for Development, 7(4): 169-182
- Laudon, K.C. & Laudon, J.P. (2010). Management Information System, New Jersey: Pearson Education Inc.

- Liedholm C and Mead D (1987), `Small Scale Industries in Developing Countries: Empirical Evidence and Policy Implications', International Development Paper No.9, Dept of Agricultural Economics, Michigan State University, East Lansing, MI, USA.

- Lopez-Nicolas, C., & Soto-Acosta, P. (2010). Analyzing ICT adoption and use effects on knowledge creation: An empirical investigation in SMEs. International Journal of Information Management, 30, 521–528.

- Lymer, A. (1997). The Internet and Small businesses: a study of impacts. Fifth European Conference on Information System.

- Maguire, S., Koh, S.C.L., Magrys, A., (2007), The adoption of e-business and knowledge management in SMEs, SCM: An International Journal, 14 (1): 37-58.

- MacGregor, R. C. and Vrazalic, L. (2006), 'The Effect of Small Business Clusters in Prioritising Barriers to E-commerce Adoption in Regional SMEs.

- Mahmood, M. Adam and Mann Gary. J (2000); Special Issue: Impact of InformationTechnology on Organizational Performance vol 16,

- Malekian,A.H.(2010). what is Information and communication technology?.

- Manochehri, N. N., Al-Esmail, R., & Ashrafi, R. (2012). Examining the impact of information an communication technologies (ICT) on enterprise practices: a preliminary perspective from Qatar. The Electronic Journal on Information Systems in Developing Countries (EJISDC), 51(3), 1–16.

- Matei, A., & Savulescu, C. (2012). Empirical analysis of ICT, economic growth and competitiveness in the EU, The International Conference on ICT Management (ICTM 2012), Wroclow, Poland.

- Matthews, P. (2007). ICT assimilation and SME expansion. Journal of International Development, 19, 817–827.

- Melville, N., Kraemer, K. L., & Gurbaxani, V. (2004) Information technology and organizational performance: an integrative model of IT business value, MIS Quarterly, 28 (22), 283-322.

- Minton, S. (2003). Nordic Nations still top information index. The World Paper . Available at:[http://www.worldpaper.com/2003/oct02/isi1.htm] accessed August 2004.

- Mobaraki,H;Aghazadeh,S.(2010). Implementation of information technology in organizations and companies (IT).

- Mutula, S.M. & Brakel, P.V. (2006). E-readiness of SMEs in the ICT sector in Botswana with respect to information access. The Electronic Library, 24(3), 402-417.

- Ngwenyama, O. and Morawczynski, O. (2009), 'Factors Affecting ICT Expansion in Emerging Economies.

- Okwuonu . F (2013). Empowering small and medium enterprises with ICT.

- Oladejo and Yinus (2013); An influential analysis of the Impact of Information Technology (IT) on Cooperative Services in Nigeria:

- Ollo-Lopez, A., & Aramendia-Muneta, M. E. (2012). ICT impact on competitiveness, innovation and environment. Telematics and Informatics, 29, 204–210.

- Osterwalder, A. (2004, March). Understanding ICT-based business models in developing countries. International Journal of Information Technology and management, 3(2-4), 333-348.

- Ongori. H. Information and communication tecnologies adoption in SMEs: literature review // Journal of Chinese Entrepreneurship. 2010. T. Vol.2, № 1. P.93 – 101.

- Pokharel, S., (2005). Perception on information and communication technology perspectives in logistics. Journal of European Information Management, 18: 136-149.

- Porter, M. E. & Millar, V. E. (1995). How information gives you competitive advantage. Harvard Business Review, July-August.

- Robert B. Kozma, (2005). national policies that connect ict-based education reform to economic and social development, 117-156.

- Sabbagh, K., Friedrich, R., El-Darwiche, B., Singh, M., & Ganediwalla, S. (2012). Maximizing the impact of digitization. The Global Information Technology Report, 121–133.

- Sajuyigbe A.S and Alabi E, (2012). Impact of information and communication technology in selected small and medium enterprises in Osogbo metropolis, Nigeria. Jounal of school of communication and information technology.

- Sakai, K. (2002), "Global Industrial Restructuring: Implications for Small Firms", STI Working Papers 2002/4, OECD, Paris.

- Sam Mensah, (2004). A review of SME financing scheme in Ghana.

- Schubert, P. and Leimstoll, U. (2007), 'Importance and Use of Information Technology in Small and Medium-Sized Companies.

- Sheils, H., Mclover, R. and O'Reilly, D., (2003). Understanding the implications of ICT adoption: Insights from SMEs. Logistics Information Management, 16: 312-326.

- Spanos, Y., Prastacos, G.P., and Poulymenakou, A. (2000), "The impact of Information and Communication Technologies on Firm Structure: Evidence from an Economy in Transition"

- Stoneman, P. & Toivanen O. 1997. The diffusion of multiple technologies: an empirical study Economics of Innovation and New Technology, 5: 1-18.

- Stroeken, Jan H.M. 2001. The adoption of IT by SMEs: the Dutch case. Journal of Enterprising Culture, 9(1): 129-152.

- Taylor, M. and Murphy, A., (2004). SMEs and e-business. Journal of Small Business Enterprise Development, 11: 280-289.

- Wolf, S. (2001). Determinants and impact of ICT use for African SMEs implications for rural South Africa, Trade and Industry Policy Strategies, 2001 Annual Forum Misty Hills, Muldersdrift.

- World Development Report (1999). The Growing Economic and Political of Cities, Provinces and Other Sub-National Entities. April 1999,